WSC REAL-TIME EIF

OBJECTIVES:

Verify the following Message Types / Classes:

02/01	Routine SHO.
02/03	Routine EET SHO.
03/02	Reacquisition Request.
03/03	Reconfiguration Request.
03/04	Forward Link Sweep.
03/06	Forward Link EIRP Reconfiguration Request.
03/07	Expanded User Frequency Uncertainty Request.
03/10	IIRV.
03/11	Doppler Compensation Inhibit (DCI).
03/12	Cancel SHO.
03/15	IIRV In-flight Update.
03/18	Delta-T adjustment.
03/51	SHO Status.
03/52	Return Channel Time Delay Data.
03/57	Service Terminated.
03/62	OPM Status
03/63	Acquisition Failure Notification.
03/64	WSC Real-Time Mode Notification.
04/	SLR.
05/	SA ODM.
06/	MA ODM.
07/	EET ODM.
08/01	Periodic SHO.
08/03	Periodic EET SHO.

Verify SHO processing by WSC.
Verify Vector Real-Time Mode processing by WSC.
Verify GCMR processing by WSC.
Verify SLR processing by the NCC.
Verify ODM Processing by the NCC.
Verify correct UPD creation by the NCC.

PREREQUISITES:

Successful completion of NCC98 EIF 2.0 (WSC SCHEDULING EIF).
Successful completion of NCC98 CSA OPS Scenario TBD).
Successful completion of NCC98 SO OPS Scenario TBD).

TEST SETUP:

Availability of current TDRS, customer, and Ground Terminal Vectors.
Event Database is void of events for current and next RAYDAY.
No equipment or resources are marked as RED or UNAVAILABLE in the SMTF system.
TDRS-4 (C1303MS) shall be assigned to SGLT1 in the WSC SMTF Database.

TDRS-4 (C1303MS) shall be designated as TDRS-041 in the NCC Database.
WSC SMTF shall have no SHOs in their system.
NCC shall build a conflict free schedule of 500 events starting at 0000Z the next RAYDAY using events 1, 3 and 4. Each event shall have a duration of 1 minute. There shall be only the minimum inter-service period between each event.
VTRS set for manual vector transmissions.
STRS set for auto-thruput of current RAYDAY schedules only.

TEST SCRIPT:

STEP	ELEMENT	ACTION
Vector Transmissions.		
Step 1.	NCC	Transmits Type 8 IIRV (03/10) for the ground terminal being simulated by SMTF.
Step 2.	WSC	Verifies receipt of the Type 8 IIRV.
Step 3.	NCC	Transmits Type 1 Vectors for TDRS-4 (C1303MS) for the current RAYDAY.
Step 4.	WSC	Verify receipt of the Type 1 IIRV.
Step 5.	NCC	Transmits only the first Type 1 vector available for Event #1. NCC then transmits Type 1 vectors for all remaining SICs to the end of the current RAYDAY.
Event #1 Scheduling.		
Step 6.	NCC	Schedules Event #1, with a start time of ASAP, and a duration of 1 hour, for the following service configuration: MAF/MAR/TRK The return service shall be DG1. The Tracking Service shall be One Way. The event is to be non-coherent. Verify the event schedules and a SHO (02/01) is transmitted to the SMTF.
Step 7.	WSC	Verifies receipt and correct processing of each SHO.
Step 8.	NCC	Verifies receipt of OPM-51s for each SHO transmitted to WSC.
Event #1 UPD Request.		
Step 9.	NCC	Issues a User Performance Data Request (92/04) from the NTS for the SUPIDEN of the event #1.
Event #1 Configuration.		
Step 10.	WSC	At Event Start minus six minutes, WSC verifies correct download and configuration of the event by the TTC and USS ADPE. WSC to report any anomalous conditions observed, if any.
Event #1 Execution		

Step 11.	WSC	At Event Start, WSC verifies equipment has configured and that WSC is transmitting MA ODMs (Message Type 06) to the NCC.
Step 12.	NCC	Verifies receipt of the MA ODMs and verifies NCC is transmitting UPDs to the NTS.

Event #1 Real-Time Mode Processing

Step 13.	NCC	At Event Start plus 1 minute, NCC shall choose and transmit a type 1 vector (03/15) for Event #1 with an epoch as close as possible, but still prior, to the event start time.
Step 14.	WSC	Verifies receipt of the vector and observes TTC and USS ADPE enter and Exit Real-Time Mode.
Step 15.	NCC	Verifies receipt of two OPM-64 s (Entering Real-Time Mode) and (Exiting Real-Time Mode).

Event #1 GCMR Processing

Step 16.	NCC	Begins to transmit the following GCMRs Forward Re-ACK Return Re-ACK Return Service Data Rate Change Forward Service Data Rate Change Return Service Data Stream Id Change Return Channel Time Delay Forward Link EIRP Reconfiguration Expanded User Frequency Uncertainty Request. Doppler Compensation Inhibit. Doppler Compensation Enable.
Step 17.	WSC	Upon receipt of each GCMR, WSC shall verify the expected reactions of the SMTF systems are observed.
Step 18.	NCC	Observes incoming ODMs to verify changes made are reflected in the ODMs. NCC then verifies UPD being transmitted also indicates the changes made.
Step 19.	NCC	Once all GCMRs have been completed, NCC shall delete the ongoing event.
Step 20.	WSC	Verifies the Cancel SHO Request (03/12) received from the NCC. WSC verifies the event terminates and a Service Terminated (03/57)message is transmitted to the NCC.
Step 21.	NCC	Verifies the Service Terminated message is received by the NCCDS.

Event #1 UPD De-Select.

Step 22.	NCC	Issues a User Performance Data Request (92/04) De-Select from the NCCDS for the SUPIDEN of the event #1.

Event #2 Scheduling.

Step 23.	NCC	Schedules Event #2, with a start time of ASAP, and a duration of 1 hour, for the following service configuration: MAF/MAF EET/MAR/MAR EET/TRK The return service shall be DG2. The Tracking Service shall be Two Way. The event is to be coherent. Verify the event schedules and a SHO (02/03) is transmitted to the SMTF.
Step 24.	WSC	Verifies receipt and correct processing of each SHO.
Step 25.	NCC	Verifies receipt of OPM-51 from WSC.

Event #2 Configuration.

Step 26.	WSC	At Event Start minus six minutes, WSC verifies correct download and configuration of the event by the TTC and USS ADPE.

Event #2 UPD Request.

Step 27.	NCC	Issues a User Performance Data Request (92/04) from the NTS for the SUPIDEN of the event #2.

Event #2 Execution.

Step 28.	WSC	At Event Start, WSC verifies equipment has configured and that WSC is transmitting MA ODMs (Type 06) and EET ODMs (Type 07) to the NCC.
Step 29.	NCC	Verifies receipt of the MA ODMs and verifies NCC is transmitting UPDs to the NTS.

Event #2 GCMR Processing

Step 30.	NCC	Begins transmitting a sequence of GCMRs from both the console and NTS. NCC will notify WSC of each GCMR prior to transmission. GCMRs to include: TBD Note: GCMRs in this sequence shall be limited to reconfiguring the Simulation portion of the EET service.
Step 31.	WSC	Upon receipt of each GCMR, WSC shall verify that expected reactions of the WSC system are observed.
Step 32.	NCC	Observes incoming ODMs to verify changes made are reflected in the ODMs. NCC then verifies UPD being transmitted also indicates the changes made.
Step 33.	NCC	Once all GCMRs have been completed, NCC shall delete the ongoing event.
Step 34.	WSC	Verifies the Cancel SHO Request (03/12) received from the NCC. WSC

verifies the event terminates and a Service Terminated (03/57)message is transmitted to the NCC.

Step 35.	NCC	Verifies the Service Terminated message is received by the NCCDS.

Event #2 UPD De-Select.

Step 36.	NCC	Issues a User Performance Data Request (92/04) De-Select from the NCCDS for the SUPIDEN of the event #1.

Event #3 Scheduling

Step 37.	NCC	Schedules Event #3, with a start time of ASAP, and a duration of 1 hour, for the following service configuration: SAF / SAR / TRK The return service shall be DG2. The Tracking Service shall be One Way. The event is to be Non-coherent. The event is to be scheduled requesting a Time Transfer Measurement. Verify the event schedules and a SHO (02/01) is transmitted to the SMTF.
Step 38.	WSC	Verifies receipt and correct processing of each SHO.
Step 39.	NCC	Verifies receipt of OPM-51 from WSC.

Event #3 Configuration.

Step 40.	WSC	At Event Start minus six minutes, WSC verifies correct download and configuration of the event by the TTC and USS ADPE.

Event #3 *UPD Request.*

Step 41.	NCC	Issues a User Performance Data Request (92/04) from the NTS for the SUPIDEN of the event #3.

Event #3 Execution.

Step 42.	WSC	At Event Start, WSC verifies equipment has configured and that WSC is transmitting SA ODMs to the NCC.

Event #3 Acquisition Failure.

Step 43.	WSC	Shall cause the SMTF system to indicate the event has had an Acquisition Failure and verifies the WSC SMTF transmits an Acquisition Failure Notification to the NCC.
Step 44.	NCC	Verifies receipt of the SA ODMs and verifies NCC is transmitting UPDs to the NTS.
Step 45.	WSC	Transmits a Return Re-ACK from the WSC console. WSC verifies the Return Service indicates lock after the Re-ACK.

Step 46.	NCC	Verifies the ODMs indicate lock.

Event #3 GCMR Processing.

Step 47.	NCC	Begins transmitting a sequence of GCMRs from both the console and NTS. NCC will notify WSC of each GCMR prior to transmission. GCMRs to include: TBD
Step 48.	WSC	Upon receipt of each GCMR, WSC shall verify that expected reactions of the WSC system are observed.
Step 49.	NCC	Observes incoming ODMs to verify changes made are reflected in the ODMs. NCC then verifies UPD being transmitted also indicates the changes made.
Step 50.	NCC	Once all GCMRs have been completed, NCC shall delete the ongoing event.
Step 51.	WSC	Verifies the Cancel SHO Request (03/12) received from the NCC. WSC verifies the event terminates and a Service Terminated (03/57)message is transmitted to the NCC.
Step 52.	NCC	Verifies the Service Terminated message is received by the NCCDS.
Step 53.	WSC	Upon completion of the delete, verify that a Time Transfer message is transmitted to the NCC.
Step 54.	NCC	Verifies receipt of the Time Transfer Message.

Event #3 *UPD De-Select.*

Step 55.	NCC	Issues a User Performance Data Request (92/04) De-Select from the NCCDS for the SUPIDEN of the event #1.

Event #4 Scheduling

Step 56.	NCC	Schedules Event #4, with a start time of ASAP, and a duration of 1 hour, for the following service configuration: KuSAF / KuSAR / TRK The return service shall be DG2. The Tracking Service shall be One Way. The event is to be Non-coherent. Verify the event schedules and a SHO (02/01) is transmitted to the SMTF.
Step 57.	WSC	Verifies receipt and correct processing of each SHO.
Step 58.	NCC	Verifies receipt of OPM-51 from WSC.

Event #4 *UPD Request.*

Step 59.	NCC	Issues a User Performance Data Request (92/04) from the NTS for the

SUPIDEN of the event #4.

Event #4 Execution.

Step 60.	WSC	At Event Start minus six minutes, WSC verifies correct download and configuration of the event by the TTC and USS ADPE.
Step 61.	WSC	At Event Start, WSC verifies equipment has configured and that WSC is transmitting SA ODMs to the NCC.
Step 62.	NCC	Verifies receipt of the MA ODMs and verifies NCC is transmitting UPDs to the NTS.

Event #4 GCMR Processing.

Step 63.	NCC	Begins transmitting a sequence of GCMRs from both the console and NTS. NCC will notify WSC of each GCMR prior to transmission. GCMRs to include: TBD
Step 64.	WSC	Upon receipt of each GCMR, WSC shall verify that expected reactions of the WSC system are observed.
Step 65.	NCC	Observes incoming ODMs to verify changes made are reflected in the ODMs. NCC then verifies UPD being transmitted also indicates the changes made.
Step 66.	NCC	Once all GCMRs have been completed, NCC shall delete the ongoing event.
Step 67.	WSC	Upon completion of the delete, verify that a Time Transfer message is transmitted to the NCC.
Step 68.	NCC	Verifies receipt of the Time Transfer Message.
Step 69.	WSC	Verifies the Cancel SHO Request (03/12) received from the NCC. WSC verifies the event terminates and a Service Terminated (03/57)message is transmitted to the NCC.
Step 70.	NCC	Verifies the Service Terminated message is received by the NCCDS.

Event #4 *UPD De-Select.*

Step 71.	NCC	Issues a User Performance Data Request (92/04) De-Select from the NCCDS for the SUPIDEN of the event #1.

Event #5 Scheduling

Step 72.	NCC	Schedules Event #5, with a start time of ASAP, and a duration of 1 hour, for the following service configuration: SSHF / KSHF / SSHR / KSHR / TRK (Ch. 3 TV) Verify the event schedules and a SHO (02/01) is transmitted to the SMTF.

Step 73.	WSC	Verifies receipt and correct processing of each SHO.
Step 74.	NCC	Verifies receipt of OPM-51 from WSC.

Event #5 *UPD Request.*

Step 75.	NCC	Issues a User Performance Data Request (92/04) from the NTS for the SUPIDEN of the event #5.

Event #5 Execution.

Step 76.	WSC	At Event Start minus six minutes, WSC verifies correct download and configuration of the event by the TTC and USS ADPE.
Step 77.	WSC	At Event Start, WSC verifies equipment has configured and that WSC is transmitting SA ODMs to the NCC.
Step 78.	NCC	Verifies receipt of the MA ODMs and verifies NCC is transmitting UPDs to the NTS.

Event #5 GCMR Processing.

Step 79.	NCC	Begins transmitting a sequence of GCMRs from both the console and NTS. NCC will notify WSC of each GCMR prior to transmission. GCMRs to include: Channel 3 to Digital Channel 3 to Analog Channel 3 to TV TBD
Step 80.	WSC	Upon receipt of each GCMR, WSC shall verify that expected reactions of the WSC system are observed.
Step 81.	NCC	Observes incoming ODMs to verify changes made are reflected in the ODMs. NCC then verifies UPD being transmitted also indicates the changes made.
Step 82.	NCC	Once all GCMRs have been completed, NCC shall delete the ongoing event.
Step 83.	WSC	Verifies the Cancel SHO Request (03/12) received from the NCC. WSC verifies the event terminates and a Service Terminated (03/57)message is transmitted to the NCC.
Step 84.	NCC	Verifies the Service Terminated message is received by the NCCDS.

Event #5 *UPD De-Select.*

Step 85.	NCC	Issues a User Performance Data Request (92/04) De-Select from the NCCDS for the SUPIDEN of the event #1.

Event #6 Scheduling

Step 86.	NCC	Schedules Event #6, with a start time of ASAP, and a duration of 1 hour, for the following service configuration: SSHF EET Verify the event schedules and a SHO (02/01) is transmitted to the SMTF.
Step 87.	WSC	Verifies receipt and correct processing of each SHO.
Step 88.	NCC	Verifies receipt of OPM-51 from WSC.

Event #6 *UPD Request.*

Step 89.	NCC	Issues a User Performance Data Request (92/04) from the NTS for the SUPIDEN of the event #6.

Event #6 Execution.

Step 90.	WSC	At Event Start minus six minutes, WSC verifies correct download and configuration of the event by the TTC and USS ADPE.
Step 91.	WSC	At Event Start, WSC verifies equipment has configured and that WSC is transmitting SA ODMs to the NCC.
Step 92.	NCC	Verifies receipt of the MA ODMs and verifies NCC is transmitting UPDs to the NTS.

Event #6 GCMR Processing.

Step 93.	NCC	Begins transmitting a sequence of GCMRs from both the console and NTS. NCC will notify WSC of each GCMR prior to transmission. GCMRs to include: TBD Note: GCMRs in this sequence shall be limited to reconfiguring the Simulation portion of the EET service.
Step 94.	WSC	Upon receipt of each GCMR, WSC shall verify that expected reactions of the WSC system are observed.
Step 95.	NCC	Observes incoming ODMs to verify changes made are reflected in the ODMs. NCC then verifies UPD being transmitted also indicates the changes made.
Step 96.	NCC	Once all GCMRs have been completed, NCC shall delete the ongoing event.
Step 97.	WSC	Verifies the Cancel SHO Request (03/12) received from the NCC. WSC verifies the event terminates and a Service Terminated (03/57)message is transmitted to the NCC.
Step 98.	NCC	Verifies the Service Terminated message is received by the NCCDS.

Event #6 *UPD De-Select.*

Step 99.	NCC	Issues a User Performance Data Request (92/04) De-Select from the NCCDS for the SUPIDEN of the event #1.

SLR Processing

Step 100.	NCC	Transmits SHOs for the next RAYDAY to encompass all services (08/01 & 08/03). All Events are to be scheduled on TDRS-D.
Step 101.	WSC	Verifies all SHOs have been received and scheduled.
Step 102.	WSC	Makes the MAF service unavailable for the next 48 hours. WSC verifies a SLR has been transmitted to the NCC indicating the unavailable service.
Step 103.	NCC	Verifies the receipt of the SLR and verifies the NCCDS indicates the MAF Event indicates Equipment unavailable.
Step 104.	WSC	Restores the SGLT1 MAF Service and verifies a SLR has been transmitted to the NCC indicating the change in the MAF system.
Step 105.	NCC	Verifies receipt of the SLR and verifies the NCCDS no longer indicated a problem with the event.

Playback Scheduling

Step 106.	NCC	NCC schedules a playback for event #1 to start 1 hour in the future.

TEST DATA REQUIREMENTS:

Events

EVENT #	SUPIDEN	TDRS	START	DURATION	SERVICES	DG/COHO	RCTD / TT	TRK
1	A4625MS	TDRS-041	ASAP	01:00:00	MAF / MAR / TRK	DG1 / Non-coho	RCTD	1 Way
2	A4625MS	TDRS-041	ASAP	01:00:00	MAF/MAF EET / MAR / MAR EET / TRK	DG2 / Coho	NONE	2 Way
3	A1446MS	TDRS-041	ASAP	01:00:00	SSAF / SSAR / TRK Antenna 1	DG2 / Non-coho	TT	1 Way
4	Y3672MS	TDRS-041	ASAP	01:00:00	KuSAF / KuSAR / TRK Antenna 2	DG-2 / Coho	RCTD	2-Way
5	M2008MS	TDRS-041	ASAP	01:00:00	SSHF / KSHF / SSHR / KSHR / TRK Antenna 2	Channel-3 TV	NONE	2-Way
6	M2008MS	TDRS-041	ASAP	01:00:00	SSHF EET Antenna 1	Non-coho	NONE	N/A

VECTORS

SIC	NAME	EVENT	VECTOR TYPE	COVERAGE	SOURCE	TRANSMITTED FROM
1540	STGT	ALL	Type 8	N/A	NTS	NTS
1303	TDRS-4	ALL	Type 1	Current day plus 48 hours	LISTNER	NCC98
4625	CGRO	1 & 2	Type 1	Current day plus 48 hours	LISTNER	NCC98
1446	HST	3	Type 1	Current day plus 48 hours	LISTNER	NCC98
3672	SP&M	4	Type 1	Current day plus 48 hours	LISTNER	NCC98
2008	SHUTTLE	5 & 6	Type 1	Current day plus 48 hours	LISTNER	NCC98

GCMRs & OTHER MESSAGES

GCMR / MESSAGE	TYPE / CLASS	EVENT	CONSOLE / NTS	SPECIFIC INFORMATION
UPDR	92/04	1	NTS	Enable
Forward Re-ACK	03/02	1	CONSOLE	N/A
Return Re-ACK	03/02	1	NTS	N/A
Reconfiguration Request	03/03	1	CONSOLE	Return Service Data Rate Change. Values TBD.
Reconfiguration Request	03/03	1	NTS	Forward Service Data Rate Change. Values TBD.
Reconfiguration Request	03/03	1	NTS	Return Service Data Stream ID Change. Values

				TBD.
Return Channel Time Delay Request	03/52	1	CONSOLE	N/A
Forward Link EIRP Reconfiguration	03/06	1	NTS	Values TBD.
Expanded User Frequency Uncertainty Request	03/07	1	NTS	Values TBD
Doppler Compensation Inhibit (DCI)	03/11	1	CONSOLE	N/A
Doppler Compensation Enabled (DCE)	03/11	1	NTS	N/A
UPDR	92/04	1	NTS	Disable
UPDR	92/04	2	CONSOLE	Enable
UPDR	92/04	2	CONSOLE	Disable
UPDR	92/04	3	NTS	Enable
UPDR	92/04	3	CONSOLE	Disable
UPDR	92/04	4	CONSOLE	Enable
UPDR	92/04	4	CONSOLE	Disable
UPDR	92/04	5	CONSOLE	Enable
Reconfiguration Request	03/03	1	CONSOLE	Channel 3 to Digital
Reconfiguration Request	03/03	1	NTS	Channel 3 to Analog
Reconfiguration Request	03/03	1	NTS	Channel 3 to TV
UPDR	92/04	5	CONSOLE	Disable
UPDR	92/04	6	CONSOLE	Enable
UPDR	92/04	6	CONSOLE	Disable